embodiment, the printer will produce a separate label which will be automatically attached to the compact disk.

In another aspect of the system, the recording device will have a recording chamber and a carriage for delivering and ejecting the compact disk to and from the recording chamber. The carriage is slidable in an axial direction to deliver and eject the disk to or from the recording chamber. The printer also has a print head slidably mounted on the recording device over the path of the carriage. The print head is slidable in a direction that is perpendicular to the axial travel of the carriage. In this manner, the visual label can be printed anywhere on the surface of the disk as the disk is either delivered to or ejected from the recording device.

In a further embodiment of the system, a printer is located outside the recording device. The printer has a slidably mounted print head to enable the print head to travel in an axial direction. Means are provided for moving the compact disk beneath the print head in a direction perpendicular to the travel of the print head. In this manner, the visual label can be produced directly on the compact disk immediately before or after the disk is delivered to the recording device.

The invention further provides for a recordable compact disk having a first surface for recording digital information and a second surface opposite the first surface. The second surface has an annular blank area having no printed information thereon between an outer edge portion and an inner edge portion for receiving a visual identification label.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** shows a compact disk having a label that has been printed directly on a surface of the compact disk.

FIG. **2** shows a compact disk and a separately printed visual label that is to be attached to the compact disk.

FIG. **3** shows a system for printing a visual label directly on a compact disk while the compact disk is either being delivered to or ejected from a recording device.

FIG. **4** shows a system for printing a visual label directly on a compact disk using a printer that is located outside the recording device.

FIG. **5** shows a system for recording digital information on a compact disk and for producing a visual label which can then be attached to the compact disk.

DETAILED DESCRIPTION OF SPECIFIC EMBODIMENTS

The present invention provides a system and methods for individually labelling a recording media by placement of an individually produced label on each medium at the time that digital information is recorded on the medium. "Recording medium" includes any type of portable medium capable of storing digital information, such as an optical, a laser, or a compact disk, or the like, or any type of magnetic media, and capable of having the digital information retrieved therefrom.

By "individually labeling" it is meant that labelling occurs immediately before or after digital information is recorded on the disk, and that the disk is provided with a visual label that uniquely identifies the digital information which had been or will be transferred. The digital information stored on the disk will typically be unique from the information stored on any other disk. For example, if a company's customer records were alphabetically stored on a set of disks, one of the disks may have the records of customers whose names begin with the letters A–M, while another disk contains the records of customers having names beginning with the letters N–Z. Other examples are almost limitless. That is not to say that no two disks will ever contain the same information, but that a primary objective of this invention is the bulk storage of data for archival and other purposes. This differs from CD-ROMs which typically have the same digital information replicated in mass.

By a visual label is meant that title information on the label is human readable (the preferred embodiment) or machine readable (such as when the label is in the form of a bar code). The title information will uniquely identify the information recorded on the CD-R. The title information can include, but is not limited to, the name of the particular database file being recorded on the CD-R, a brief description of the type of information recorded on the CD-R, a table of contents, or the like. Further, the title information can contain information relating to distribution, mailing, filing, retrieval, security, controlled copy number, etc.

As previously described, the type of disk that is preferable for individually labeling is the CD-R. The CD-R is preferable because unique information can conveniently and economically be recorded on each disk, unlike the CD-ROM where it would be uneconomical to stamp each disk with a different stamp. Also unlike the CD-ROM, the CD-R does not have title information silkscreened on a surface. Since the title information on the CD-R is typically unique, it would not be convenient or economical to use a different silkscreen for each CD-R. Therefore, the system and method of the present invention provide for "individually labelling" a CD-R at the time that digital information is recorded on the CD-R.

Exemplary CD-Rs are available from a variety of commercial suppliers such as 3M, St. Paul, Minn. Once the CD-R has digital information recorded thereon, the digital information can then be retrieved by playing the CD-R in a conventional CD-ROM reader. As described in detail hereinafter, the commercially supplied CD-R has one surface for recording the digital information and a second surface on the opposite side of the disk which has the manufacturer's information and also space for manually applying a visual label, typically by using a felt-tip pen or marker.

Digital information is recorded on the CD-R by a compact disk recorder. Digital information includes any kind of information that can be communicated to a person by sight or sound that has been put in the form of digital quanta, typically in binary form. This is commonly referred to as "digitizing" information. For example, textual information, analog sound signals, and other forms of information can be digitized by conventional techniques, e.g. converting an analog signal to a digital signal in an analog-to-digital converter, inputting textual information using keyboards, scanners, and the like.

Once information has been digitized, it can be transferred from one location to another by various different mechanisms such as by electrical or light pulses, or the like. When a series electrical or light pulses are used to transfer the digital data, the pulses are referred to as a digital data stream. A compact disk recorder will receive digital information from a digital data stream and record the digital information on the CD-R.

Suitable compact disk recorders are available from JVC Information Products Company of America, Huntington Beach, Calif., or Microboards Inc. of America, Carver, Minn. Typical compact disk recorders can receive the digital information from most standard personal and other computer systems. An acceptable system is a 33 mHz 486-based system with 4 MB RAM.